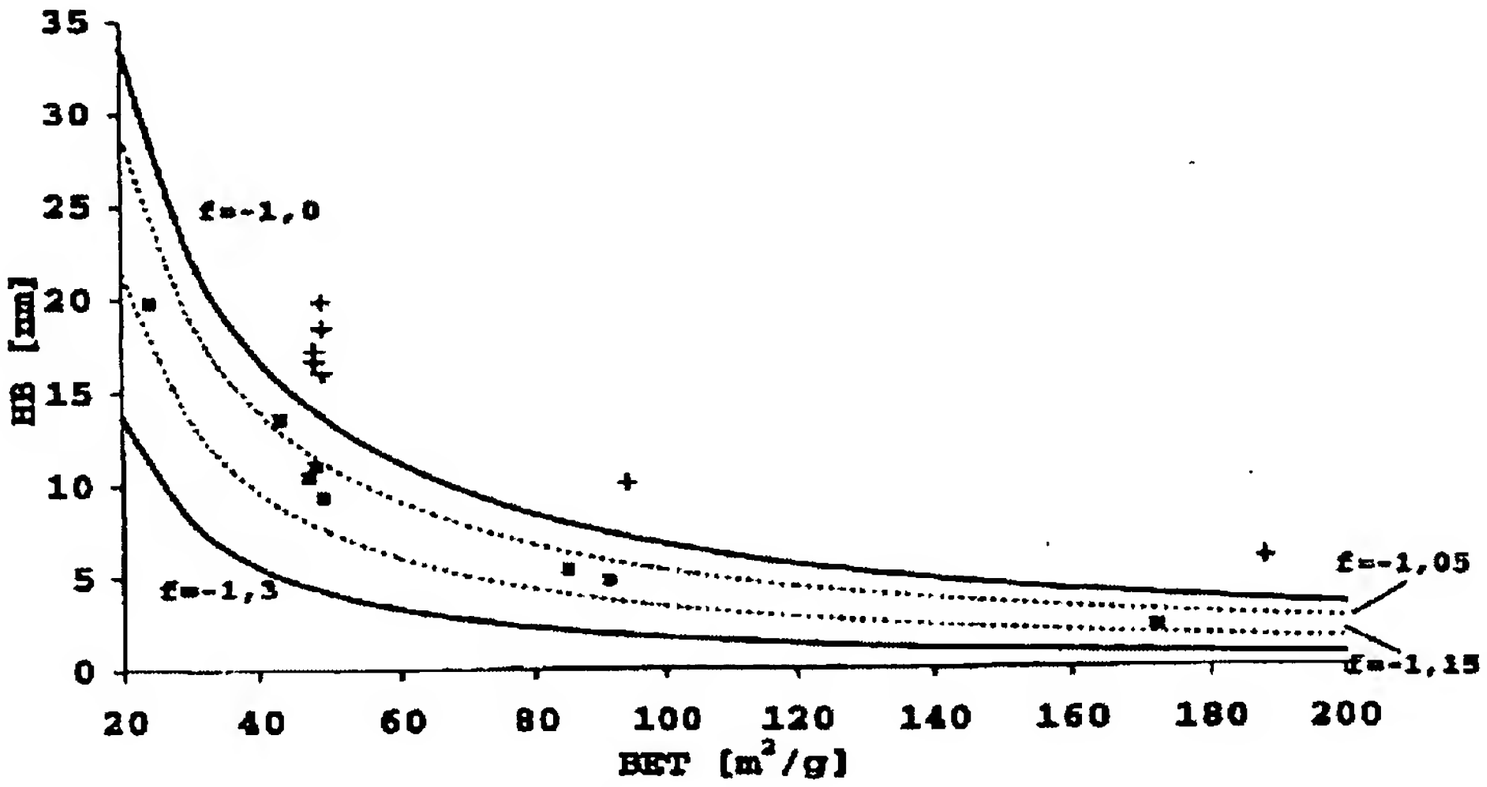
DISCUSSION OF THE AMENDMENT

Claims 1-20 are active in the present application. Claims 16-17 and 19-20 are presently withdrawn from active prosecution. Independent Claim 1 is amended to correct a typographical error.

No new matter is added.

REMARKS

Applicants have demonstrated that the titanium dioxide powder of the present claims is different from generic titanium dioxide (i.e., titanium dioxide powder falling outside the half width range recited in present Claim 1), see the data in Table 1 on page 17 of the specification. Examples A1-A9 are inventive examples having features encompassed by the present claims. Comparative Examples B1-B3 and B5-B8 are made in a manner similar to Examples A1-A9 but do not have the half width features recited in present Claim 1. The inventive and comparative examples are charted in Figure 2 which shows that the comparative examples do not fall within the half width distribution curve recited in Claim 1 (see the "+" symbols of Figure 2 which represent comparative examples not meeting the presently claimed half width requirement).



Examples C1-C5 on pages 19 and 20 of the specification show that the titanium dioxide powder of the present claims is different from generic titanium dioxide powder and titanium dioxide powder that does not meet the half width requirement of the present claims. Table 4 on page 20 of the specification shows the effects of stabilization achieved by including the titanium dioxide of the invention in a silicon rubber composition (see Table 4 reproduced below for convenience). Examples C3, C4 and C5 are inventive examples (see

page 20, lines 10-12). The inventive silicone rubber compositions have heat protection stabilization that is substantially better in comparison to silicone rubber compositions containing conventional titanium dioxide powder.

TABLE 4

Two-component silicone rubber

	Length Change [%] after		
Example	1 Day	3 Days	7 Days
C1 (comp.)	98.6	—	—
C2 (comp.)	46.3	58.9	70.0
C3	16.3	27.9	39.5
C4	18.7	41.8	52.7
C5	29.0	49.0	58.0

Applicants have thus shown that the titanium dioxide powder of the present claims is substantially different from generic and prior art titanium dioxide powders.

The Office asserts that Claims 1-12, 15 and 18 are obvious over Zhang (U.S. 7,217,407). Applicants traverse the rejection on the grounds that (1) Zhang nowhere discloses or suggests a titanium dioxide powder having all of the features recited in the present claims, and (2) Zhang teaches away from the presently claimed invention.

Independent Claim 1 recites a half width feature that relates BET surface area to the half width of the primary particle distribution. Zhang does not disclose or suggest a titanium dioxide powder meeting this requirement of present Claim 1.

Zhang shows the primary particle size distribution of an inventive and comparative example in Figure 1. The half width of the primary particle distributions may be approximated by measuring the width at half-height of the peaks representing the primary particle distributions. The half width of Zhang's inventive powder can be approximated by first measuring the height of the primary particle distribution peak (about 82 mm as measured directly from Figure 1) then measuring the width of the peak representing the primary particle

distribution at half the peak height (i.e., at a height of 41 mm from the baseline measured directly from Figure 1 of the Zhang patent). The width of the inventive primary particle distribution can be measured directly from Figure 1 (i.e., about 14.5 mm). This may then be correlated to particle size in the following manner:

> {(14.5 mm [i.e., the measured width of the primary particle distribution peak at half height] x (0.09 μm)/(47 mm)[a correlation of particle size obtained by directly measuring the baseline between 0.010 and 0.100 μm in Figure 1])} = 27 nm.

A similar half width determination for the comparative example represented by the solid line in Figure 1 of Zhang provides a half width of 22 nm. The BET surface area of the inventive and comparative examples of Zhang are about 100 m^2/g (see Table 2 in column 11 of Zhang).

The above-calculated half width values of 22 nm and 27 nm for the inventive and comparative examples, respectively, of Zhang may be compared with the half width distribution shown in Figure 2 of the present application. For a powder having a BET surface area of 100 m^2/g, the maximum half width value is 6.7 nm (see Figure 2 or Table 3 on page 19 of the specification). It is therefore readily evident that the half width values of the primary particle distribution peaks shown in Figure 1 of Zhang lie outside the acceptable limits recited in present Claim 1 and shown in Figure 2. The Zhang powders thus do not inherently meet the half width requirement of the present claims.

Moreover, Zhang's inventive titanium dioxide powder is made by a process that includes the use of hydrogen gas (see the Abstract and throughout the disclosure of Zhang). The inventive material disclosed in Figure 1 of Zhang has a half width that is broader than the half width of the primary particle distribution of the comparative example. Thus, Zhang discloses to those of ordinary skill in the art that in order to modify a prior art titanium dioxide powder with the use of hydrogen, it is necessary to increase the half width of the primary particle distribution. This is contradictory to the presently claimed invention because

the half width resulting from Zhang's inventive process lies further outside the allowable range recited in present Claim 1 and shown in present Figure 2.

Further, Zhang nowhere discloses that half width of primary particle distribution peaks is a result effective variable or that the half width of a powder may be engineered to fall within certain ranges. Likewise, Zhang nowhere discloses or suggests that there is any relationship with the half width of the primary particle distribution and any performance characteristic of the Zhang titanium dioxide powder.

Applicants thus submit that (1) does not Zhang disclose or suggest a titanium dioxide powder having the features recited in the present claims, and (2) Zhang teaches away from the presently claimed invention.

Applicants thus request withdrawal of the rejection in view of Zhang.

The Office also rejected Claims 1-2, 7, 13-15 and 18 as obvious over a patent to Pratsinis (U.S. 5,698,177). Applicants traverse the rejection on the ground that Pratsinis, like Zhang, fails to disclose or suggest a titanium dioxide powder having the half width features of the presently claimed invention. Applicants further traverse the rejection on the ground that the Office failed to set forth a *prima facie* case of obviousness and thereby improperly shifted the burden to Applicants to demonstrate patentability of the originally claimed invention.

The Office admits that Pratsinis does not disclose several of the features of the present claims, for example: (i) a specified amount of aggregates having a diameter of more than 45 μm, and (ii) the half width primary particle distribution recited in the present claims (see page 5 of the September 15, 2008 Office Action). The Office did nothing more than conclude, without any evidentiary basis whatsoever, that the "proportion of particles" property recited in the present claim (e.g., the amount of aggregates having a diameter of more than 45 μm) is taught by Pratsinis.

Applicants submit that such an assertion unsupported by any factual evidence is insufficient basis for setting forth a *prima facie* case of obviousness.

The Office's assertion that Pratsinis discloses a titanium dioxide having the half width values recited in the present claims is entirely unsupported (see the last sentence in the last full paragraph on page 5 of the September 15 Office Action). The Office provided no basis whatsoever for asserting that the titanium dioxide powders of Pratsinis meet the half width requirement of the present claims. The Office thus failed to meet its burden in setting forth a *prima facie* case of obviousness and improperly shifted the burden to Applicants to prove patentability.

Contrary to the Office's assertion, Pratsinis does not disclose or suggest a titanium dioxide powder meeting the 45 μm feature recited in the present claims. In fact Zhang, discloses that particle aggregation (agglomeration) occurs as an effect of the process used to make the Pratsinis titanium dioxide (see for example, column 1, lines 37-44; the paragraph bridging columns 8 and 9; and the paragraph bridging columns 10 and 11). Such aggregation (agglomeration) necessarily results in the formation of aggregates of primary titanium dioxide particles and thus Pratsinis teaches a titanium dioxide powder that contains aggregates. Such a teaching is contradictory to the requirement of the present claims that the amount of aggregates having a particle diameter of 45 μm or greater must be limited.

Further, Pratsinis discloses that electric fields may be used to maximize production of particles having high surface area and that such electric fields also result in increased particle size (see column 3, lines 29-31 and 52-54). This is further evidence that the Pratsinis titanium dioxide powder has properties that are inconsistent with the requirements of the present claims.

It appears that the Office is of the belief that either the half width features recited in the present claims are nothing more than newly discovered properties of the Pratsinis

titanium dioxide (see the paragraph bridging pages 5 and 6 of the September 15 Office Action). As discussed above Applicants have demonstrated that not all titanium dioxide powders have the half width properties recited in the present claims.

Moreover, as explained above in the arguments pertaining to Zhang, the Office has nowhere demonstrated that the half width is a result effective variable or in any way correlated to BET surface area.

For the reasons discussed above, Applicants submit the rejection of the present claims as obvious over Pratsinis and/or Zhang are not supportable and should be withdrawn.

Respectfully submitted,

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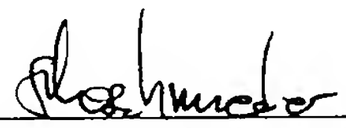
Norman F. Oblon



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